U.S. PATENT & TRADEMARK OFFICE
JUN 23 2004

Fig. 1

(PRIOR ART)

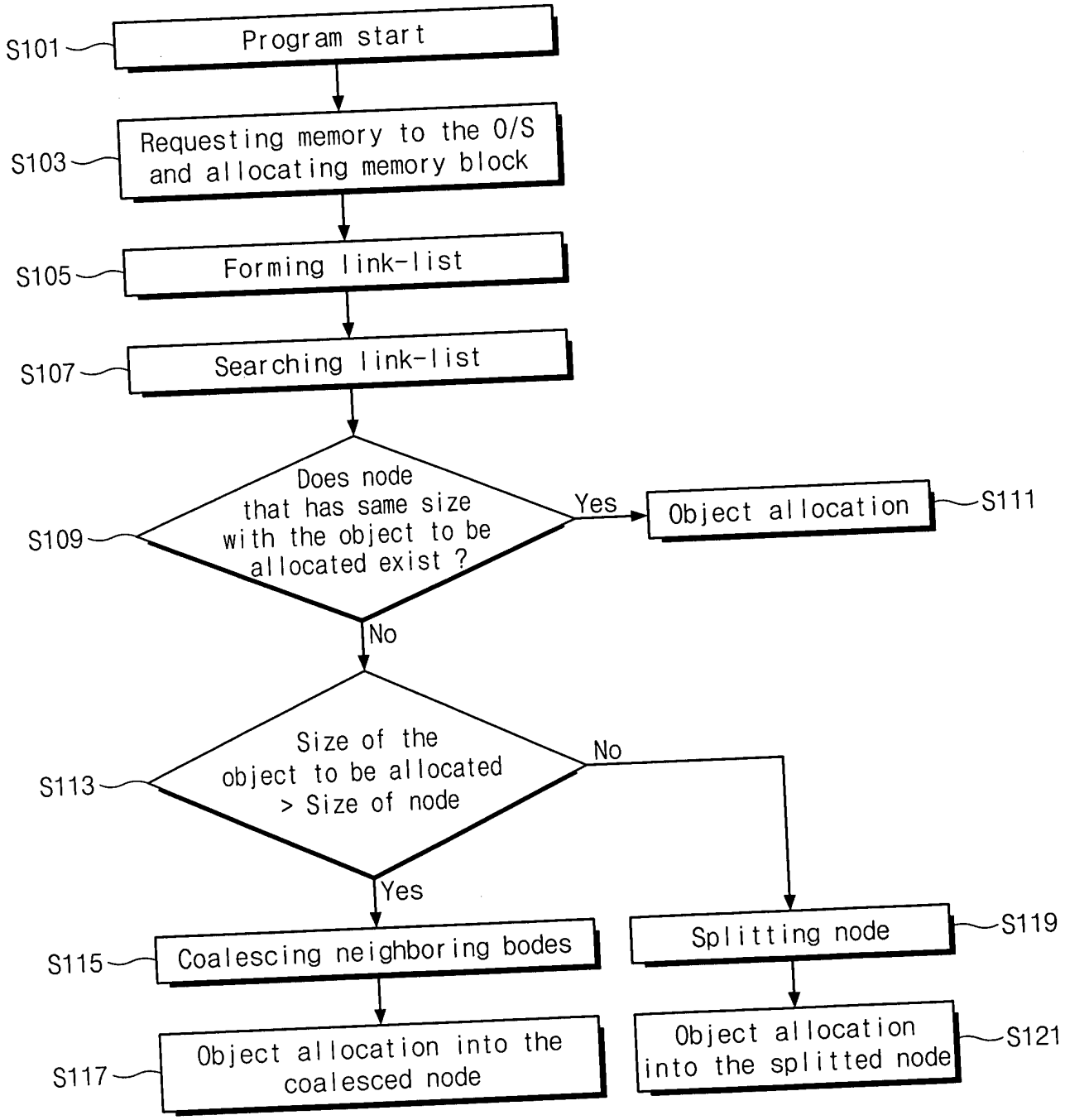


Fig. 2

(PRIOR ART)

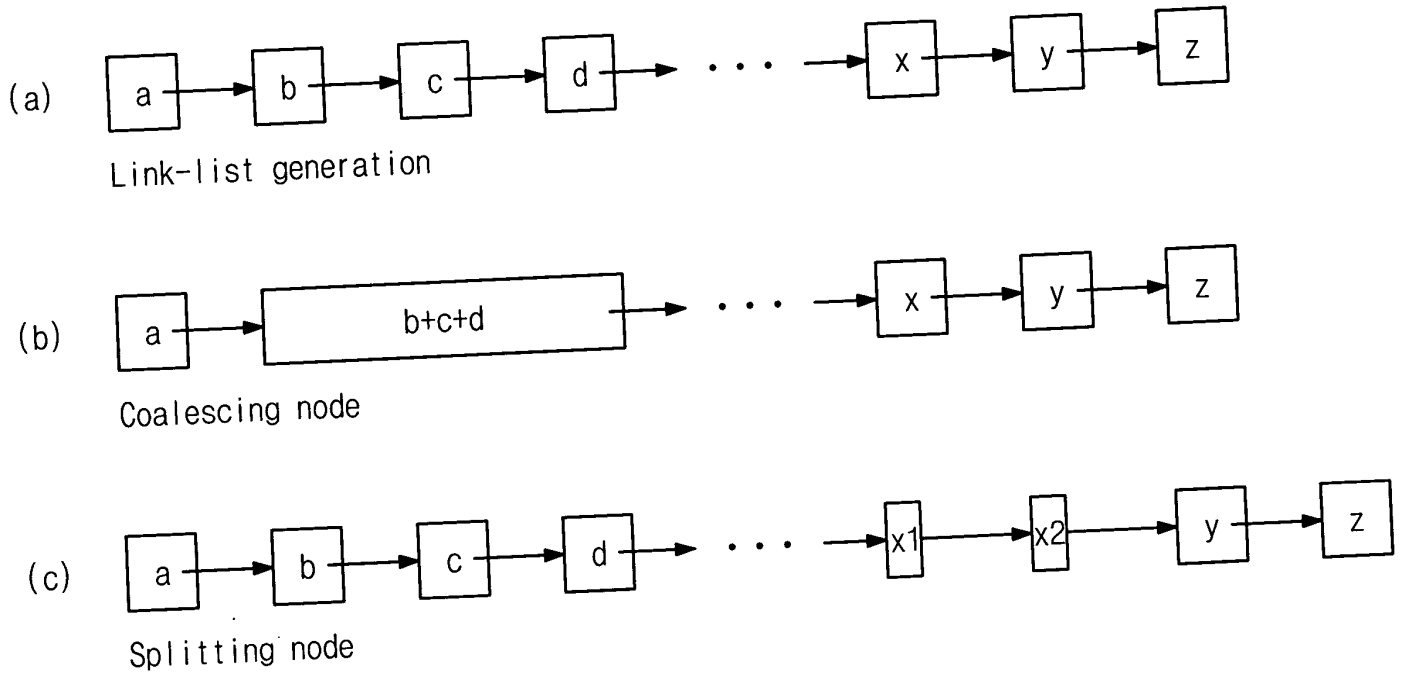


Fig. 3

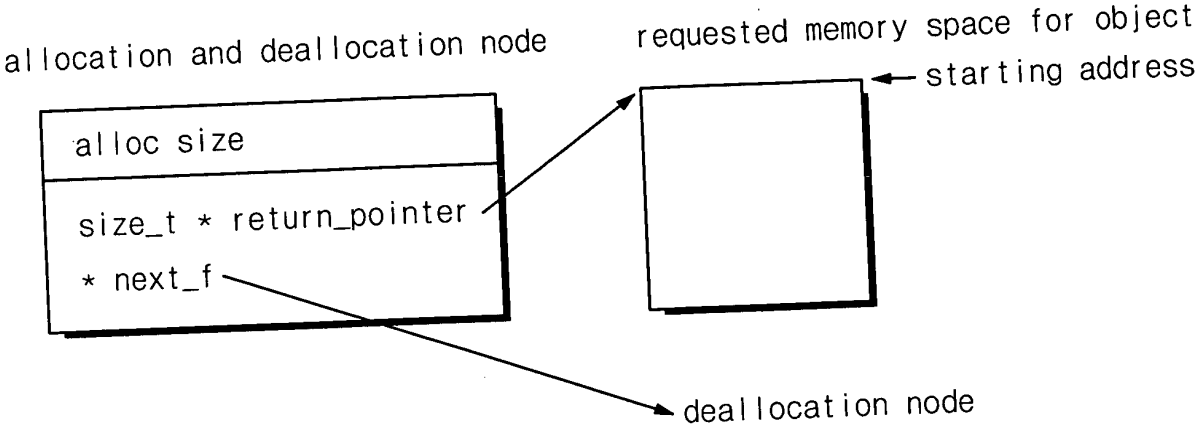

allocation and deallocation node
requested memory space for object
starting address
alloc size
size_t * return_pointer
* next_f
deallocation node

Fig. 4

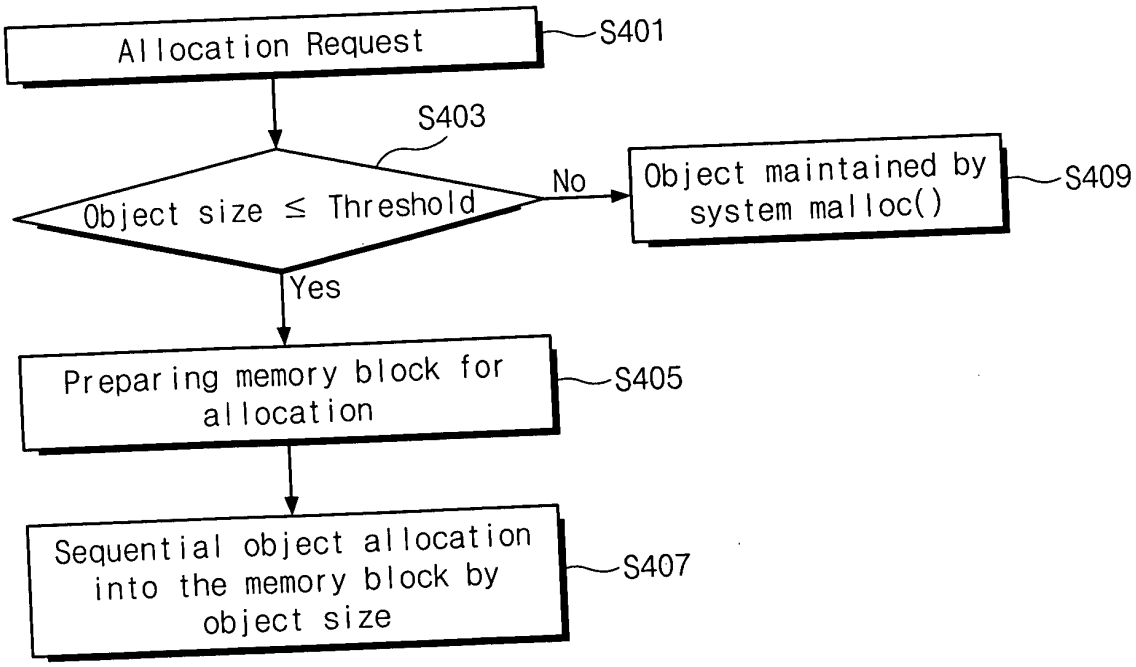

Allocation Request
S401
S403
Object size ≤ Threshold
No
Object maintained by system malloc()
S409
Yes
Preparing memory block for allocation
S405
Sequential object allocation into the memory block by object size
S407

Fig. 5

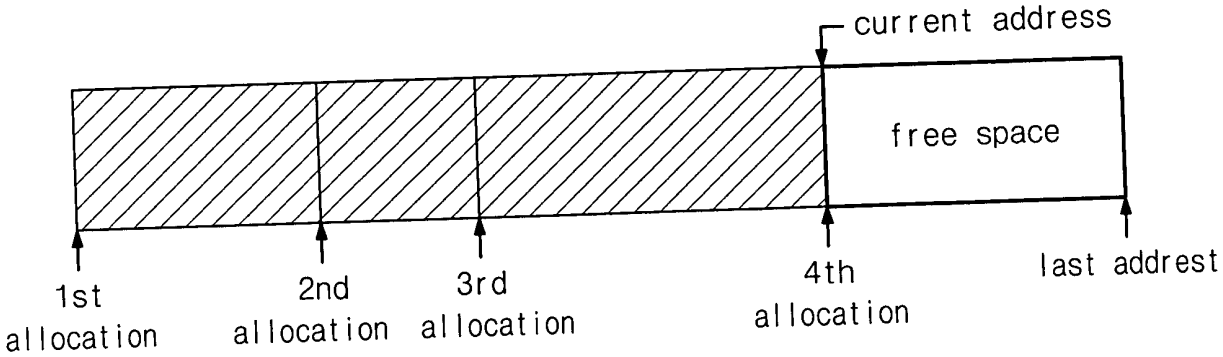

current address
free space
1st allocation
2nd allocation
3rd allocation
4th allocation
last addrest

Fig. 6

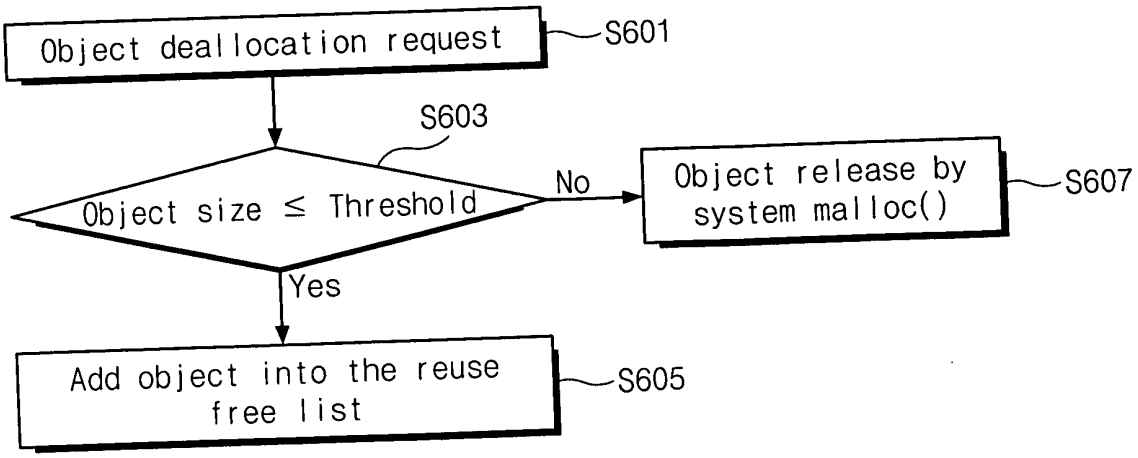

Object deallocation request
S601
S603
Object size ≤ Threshold
No
Object release by system malloc()
S607
Yes
Add object into the reuse free list
S605

Fig. 7

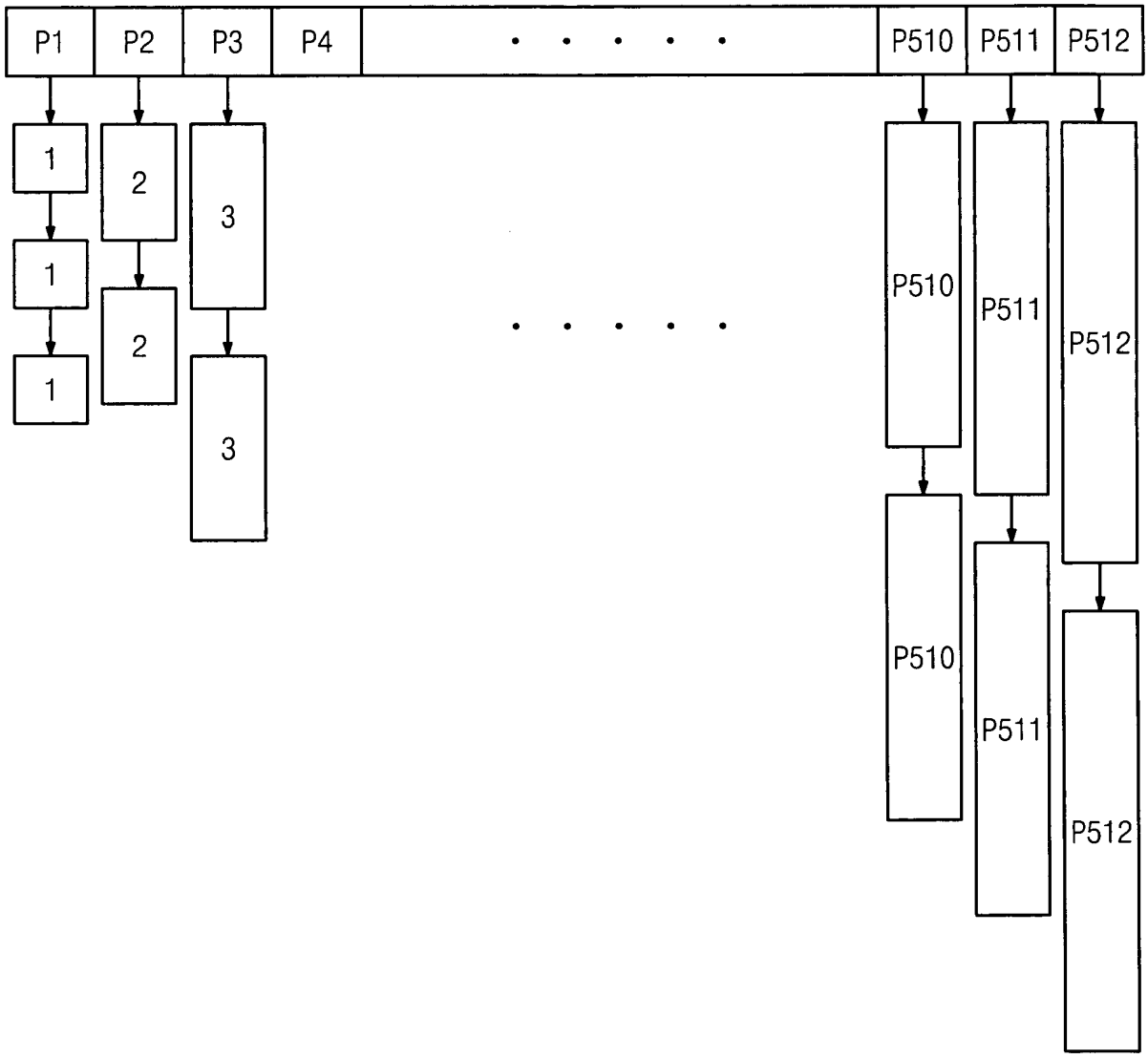
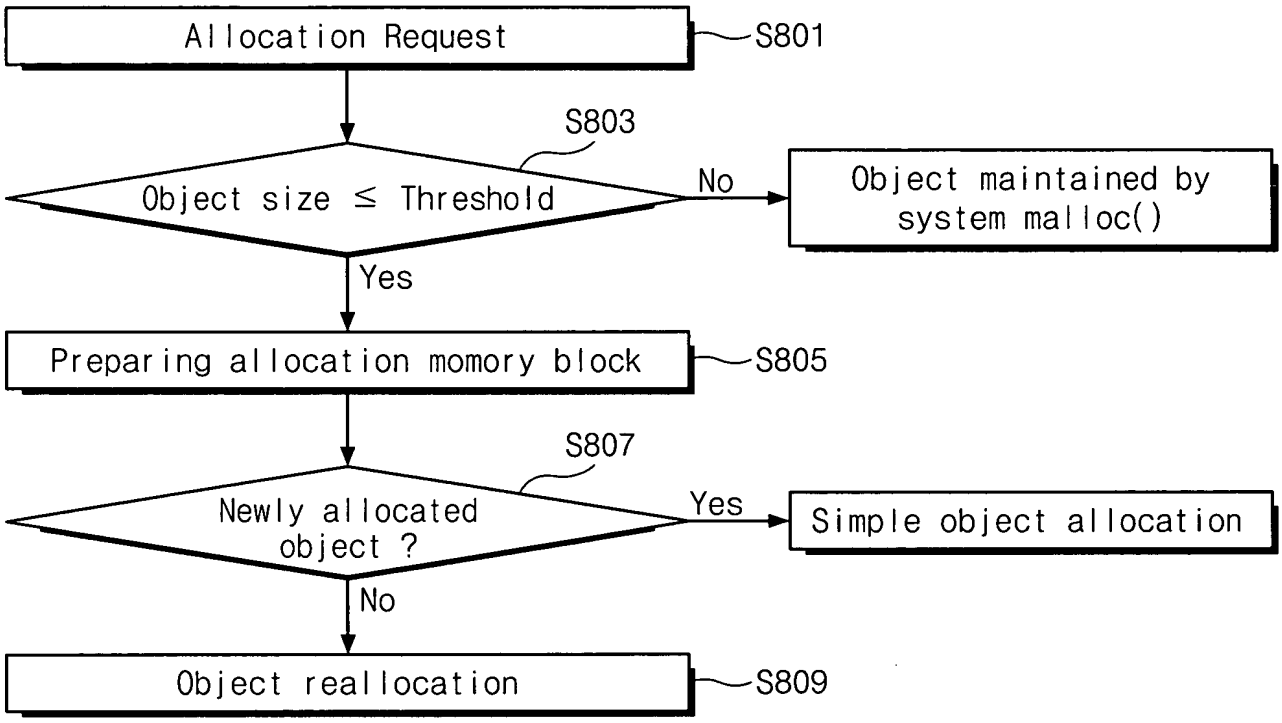

P1
P2
P3
P4
P510
P511
P512
1
1
1
2
2
3
3
P510
P511
P512
P510
P511
P512

Fig. 8


Allocation Request
S801
S803
Object size ≤ Threshold
No
Object maintained by system malloc()
Yes
Preparing allocation momory block
S805
S807
Newly allocated object ?
Yes
Simple object allocation
No
Object reallocation
S809